CALIFORNIA ENERGY COMMISSION

In the Matter of:

Preparation of the
2007 Integrated Energy Policy Report
(2007 EIPR)

Docket No. 06-IEP-1A

COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR ON THE COMMITTEE DRAFT OF THE 2007 INTEGRATED ENERGY POLICY REPORT

The California Independent System Operator Corporation ("CAISO") submits the following comments to the Integrated Energy Policy Report Committee ("EIPR Committee") of the California Energy Commission ("CEC") regarding the Draft 2007 Integrated Energy Policy Committee Report ("Draft 2007 EIPR Report" or "Draft Report").

The CAISO appreciates the significant work and effort of CEC staff in developing the Draft Report and, overall, believes the document to be a good and useful and work product. The CAISO's comments on the Draft Report are limited to the following discussion of renewables.

Draft Report, Chapter 4

Text from Draft Report. At page 134 of Chapter 4, "Using Renewable Resources to Meet Energy Needs", in the section entitled "Dispatchability and Reliability," the last paragraph contains the following text:

> In addition to the ability to ramp up or down on an hourly basis, the IAP suggests that an electricity mix for 2020 that includes 33 percent renewables will need a relatively modest average increase in regulation control resources (20 MW), such

> as automated demand response technologies, variable speed pumped hydro, and flywheel energy storage.[167] The IAP 33 percent by 2020 scenario also suggested a need for significant amount of volt-amperes reactive (VAR) compensation to maintain voltage stability.[168]

CAISO Comment. The CAISO has developed an "Integration of Renewable Resources Report" (currently in draft form) that addresses the operational and transmission impacts of increased renewable capacity and how the system can successfully integrate these increased resources. The system analysis focused on a 20 percent renewable energy requirement by the end of 2010.

This CAISO Report builds on other integration studies, especially the CEC's Intermittency Analysis Project Final Report, which is referenced in the Draft IEPR text above, by adding significant new analysis and study to the subject area of operations of intermittent generating resources. The CAISO notes that, in developing the CAISO Report, we worked collaboratively with parties with important and pertinent expertise in the subject area: load serving entities, state and federal regulators, industry experts, adjacent control areas and the owners/developers of renewable resources. These parties assisted the CAISO in identifying integration challenges and solutions, which are laid out in the CAISO Report.

One of the conclusions from the "Operating Issues" portion of the CAISO Integration of Renewable Resources Report is as follows:

> The CAISO regulation capacity requirements will increase by 170 MW to 250 MW for "Up Regulation" and 100 MW to 500 MW for "Down Regulation". The amount of increase varies with the season and hour of the day. The fact that this increase in regulation requirements is *ten times larger* than in previous studies[,] is due to a new and improved model that more accurately represents the time lags in the Automated Dispatch System and in generator response to dispatch commands. (Emphasis added)

CAISO Request that the Draft Report Be Modified. In light of the CAISO's comments above, the CAISO respectfully requests the text from the Draft IEPR be modified to reflect the information in the CAISO Report. In this regard, the CAISO requests that the passage be modified as represented in the blacklined text below:

While ~~In addition to the ability to ramp up or down on an hourly basis,~~ the IAP suggests that an electricity mix for 2020 that includes 33 percent renewables will need a relatively modest average increase in regulation control resources (20 MW) (plus such additional regulation as is necessary to have the ability to ramp up or down on an hourly basis), subsequent analysis by the CAISO shows that the CAISO regulation capacity requirements will increase by 170 MW to 250MW for "Up Regulation" and 100 MW to 500 MW for "Down Regulation." The amount of increase varies with the season of the year and hour of the day. The fact that this increase in regulation requirements is ten times larger than indicated by the IAP study is due to the use of a new and improved model, that more accurately represents the time lags in the Automated Dispatch System and in generator response to dispatch commands. new footnote This increased regulation can come from traditional sources as well as potential future technology sources, such as automated demand response technologies, variable speed pumped hydro, and flywheel energy storage.[167] The IAP 33 percent by 2020 scenario also suggested a need for significant amount of volt-amperes reactive (VAR) compensation to maintain voltage stability.[168]

[new footnote: CAISO Integration of Renewables Report: http://www.caiso.com/1c60/1c609a081e8a0.pdf (This report will be available on our website throughout the stakeholder process).

Dated: October 19, 2007

Respectfully submitted
California Independent System Operator
By:

//signed//
//Robin-Smutny-Jones//

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